

Ackerman, Joyce

From: Thomas J. Krasovec <TJKrasovec@Geosyntec.com>
Sent: Monday, December 11, 2017 11:19 AM
To: Tobi L. Moore; Stovall - CDPHE, Curtis; Dave Folkes
Cc: Richard Dean; Ackerman, Joyce; Walker - CDPHE, David; MacGregor - CDPHE, Kelly; jason.king@coag.gov; Long - CDPHE, Brian; Henderson, Jerry; Jonathan H. Steeler (JSteeler@sennlaw.com)
Subject: RE: Site Management Plan - Section 6 - Asbestos Monitoring

Thanks Tobi, Greatly appreciated, I have letter forth coming on the foam that I will forward shortly with the MSDS you sent me.

TJK

From: Tobi L. Moore [mailto:tmoore@ACTEnviro.com]
Sent: Monday, December 11, 2017 11:14 AM
To: Thomas J. Krasovec <TJKrasovec@Geosyntec.com>; Stovall - CDPHE, Curtis <curtis.stovall@state.co.us>; Dave Folkes <DFolkes@Geosyntec.com>
Cc: Richard Dean <rdean@stratuscompanies.com>; Ackerman, Joyce <Ackerman.Joyce@epa.gov>; Walker - CDPHE, David <david.walker@state.co.us>; MacGregor - CDPHE, Kelly <kelly.macgregor@state.co.us>; Jason King <Jason.King@coag.gov>; Long - CDPHE, Brian <briant.long@state.co.us>; Henderson, Jerry <jerry.henderson@state.co.us>; Jonathan H. Steeler (JSteeler@sennlaw.com) <JSteeler@sennlaw.com>
Subject: RE: Site Management Plan - Section 6 - Asbestos Monitoring

Already sent it...

Tobi Moore | General Manager
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"Concern for man himself and his safety must always form the chief interest of all technical endeavors." - Albert Einstein

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From: Thomas J. Krasovec [<mailto:TJKrasovec@Geosyntec.com>]

Sent: Monday, December 11, 2017 11:13 AM

To: Stovall - CDPHE, Curtis <curtis.stovall@state.co.us>; Dave Folkes <DFolkes@Geosyntec.com>

Cc: Richard Dean <rdean@stratuscompanies.com>; Ackerman, Joyce <Ackerman.Joyce@epa.gov>; Walker - CDPHE, David <david.walker@state.co.us>; MacGregor - CDPHE, Kelly <kelly.macgregor@state.co.us>; Jason King <Jason.King@coag.gov>; Long - CDPHE, Brian <briant.long@state.co.us>; Henderson, Jerry <jerry.henderson@state.co.us>; Tobi L. Moore <tmoore@ACTEnviro.com>; Jonathan H. Steeler (JSteeler@sennlaw.com) <JSteeler@sennlaw.com>

Subject: RE: Site Management Plan - Section 6 - Asbestos Monitoring

Tobi,

Please have DS take care of the revisions please.

Thanks TJK

From: Stovall - CDPHE, Curtis [<mailto:curtis.stovall@state.co.us>]

Sent: Monday, December 11, 2017 10:20 AM

To: Dave Folkes <DFolkes@Geosyntec.com>

Cc: Richard Dean <rdean@stratuscompanies.com>; Ackerman, Joyce <Ackerman.Joyce@epa.gov>; Walker - CDPHE, David <david.walker@state.co.us>; Thomas J. Krasovec <TJKrasovec@Geosyntec.com>; MacGregor - CDPHE, Kelly <kelly.macgregor@state.co.us>; Jason King <Jason.King@coag.gov>; Long - CDPHE, Brian <briant.long@state.co.us>; Henderson, Jerry <jerry.henderson@state.co.us>; Tobi L. Moore <tmoore@actenviro.com>; Jonathan H. Steeler (JSteeler@sennlaw.com) <JSteeler@sennlaw.com>

Subject: Site Management Plan - Section 6 - Asbestos Monitoring

Dave,

As you know, we received the Site Management Plan late in the day last Wednesday, December 6, 2017. We had not received an earlier draft version of the document prior to last Wednesday. We reviewed the plan over the weekend. Attached are CDPHE's comments in the form of a marked-up PDF file. Our comments are limited to Section 6 - Asbestos Monitoring.

I attended the kickoff meeting this morning at the site, which included asbestos awareness training. I'm confident that the team understands the regulatory requirements related to asbestos management. As such, CDPHE believes that it is unnecessary to have the plan revised and finalized before the start of the work; however, the plan needs to get revised as quickly as practical. Please let us know if you have any questions about our comments.

Thanks,
Curt

--

Curt Stovall, P.E.

Environmental Protection Specialist

Solid Waste Permitting Unit

Solid Waste and Materials Management Program



COLORADO

Hazardous Materials
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Ackerman, Joyce

From: Stovall - CDPHE, Curtis <curtis.stovall@state.co.us>
Sent: Monday, December 11, 2017 10:20 AM
To: Dave Folkes, PE
Cc: Richard Dean; Ackerman, Joyce; Walker - CDPHE, David; Thomas Krasovec; MacGregor - CDPHE, Kelly; jason.king@coag.gov; Long - CDPHE, Brian; Henderson, Jerry; Tobi L. Moore; Jonathan H. Steeler (JSteeler@sennlaw.com)
Subject: Site Management Plan - Section 6 - Asbestos Monitoring
Attachments: CDPHE Comments - Attachment E - Neuhauser Landfill draft SMP & Asbestos Plan - BL cmnts.pdf

Dave,

As you know, we received the Site Management Plan late in the day last Wednesday, December 6, 2017. We had not received an earlier draft version of the document prior to last Wednesday. We reviewed the plan over the weekend. Attached are CDPHE's comments in the form of a marked-up PDF file. Our comments are limited to Section 6 - Asbestos Monitoring.

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Thanks,
Curt

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Curt Stovall, P.E.
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Site Management Plan

Redtail Drum Remediation
1831 Weld County Road 5
Erie, Colorado 80516

November 27, 2017

Prepared for:

GEOSYNTEC CONSULTANTS, INC.

5670 Greenwood Plaza Blvd., Suite 540
Greenwood Village, Colorado 80111

On Behalf of:

Stratus Redtail Ranch, LLC

Prepared by:



PSC Industrial Outsourcing, LP

210 West Sand Bank Road
Columbia, Illinois 62236

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LIST OF FIGURES

1 INTRODUCTION

PSC Industrial Outsourcing, LP (PSC) is providing Geosyntec with this Site Management Plan (SMP). The SMP provides the overall approach that PSC will take to perform the remedial activities for the Redtail Ranch Drum Remediation Project. The SMP outlines PSC's approach to the site layout, the sequencing of activities, the placement and positioning of logistical support areas, PSC's excavation approach and methods.

2 PSC'S GENERAL APPROACH

PSC's general approach to performing the remedial actions for the Redtail Ranch Drum Remediation Project will be to excavate and remove drums and impacted material. PSC will establish offices and logistical support areas within the support zone along the northern portion of the property. The Site Layout Map is depicted on Figure 2.

PSC will begin remediation work along the northern section of the property in Phase 1 (shown in Figure 2). This area is a suspected area of drums and PSC does not have clear excavation boundaries established at this time. Once Phase 1 is completed and it is determined to meet remedial objectives, PSC will continue to Phase 2. The Phase 2 excavation is expected to be the primary location of buried drums and therefore the site will primarily be constructed to facilitate work in this area.

Final remediation activities will involve excavation activities within Phase 3. This area will involve excavation activities to remove, load, and dispose of sludge-type material impacted with MEK's and toluene.

PSC will have odor suppressing foam equipment onsite in the event odorous material is encountered. For dust suppression, a mobile water sprayer will be onsite during excavation activities.

PSC will use sloping and/or benching methods to permit excavation to the required remediation depths. PSC will use sloping and/or benching to reach an anticipated maximum depth of 15 feet below ground surface (bgs).

PSC does not anticipate large quantities of groundwater in the excavation and therefore PSC has not planned to pump groundwater from the excavations. PSC does expect some perched water and some run off water, this water will be collected as necessary and stored in an onsite tank.

Upon completion of each excavation, PSC will leave the open excavations for others to backfill at a later date. The exception will be for excavation areas that are unsafe for site personnel, these areas will be partially backfilled with onsite fill material.

3 MOBILIZATION AND SITE PREPARATION

PSC will mobilize excavation equipment, materials and supplies to complete remediation work. PSC will establish a field office and tool storage within the support zone. PSC will place stone in the support zone area to support work and parking.

Access roads will be constructed for access and egress into the site. Primary roads will be constructed outside of the expected exclusion zone. Secondary roads will be constructed into the exclusion zone and in other areas as excavation progresses.

Stormwater controls will be installed as part of the site preparation. A variety of methods will be used to minimize stormwater runoff and sediment controls. Silt fencing will be placed in areas susceptible to erosion and will also be used to control sediment run off. Wattles will be used primarily to direct non-excavation run-off water away from the excavation. A combination of wattles, straw bales, and sand bags will be used to control and capture water run-off within the excavation area(s)

PSC will also need to layout a air monitoring/sampling grid and place air monitoring stations in various areas (see Ambient Air Monitoring section)

PSC will establish proper exclusion zones by marking the boundaries with orange construction fence. A contamination reduction zone will be established and the support zone during the initial site set up and site preparation

4 SITE LOGISTICS AND SUPPORT ZONE

PSC anticipates using the field office in the support zone through the entire remediation project. PSC will use this field office as a check in point for all visitors entering the site. Truck traffic will be routed through a one-way access road from the site entrance back around to the exit.

PSC will establish various work zones for the project. The work zones will include the Support Zone, the Exclusion Zone, and the Contamination Reduction Zone. Because the remediation activities will occur at different areas on the site, the varying zones will be required to shift or to be relocated periodically.

5 EXCAVATION AND DRUM REMOVAL

PSC will implement benching and/or shoring techniques in order to excavate and remove the impacted materials and drums. A mini excavator and skidsteer will be used to facilitate most excavations.

5.1 Phase 1 Excavation

Excavations are anticipated to be shallow excavations (less than 6 feet bgs) PSC anticipates using basic benching and/or sloping methods to excavate and remove the drum(s) in this area.

5.2 Phase 2 Excavation

Excavations are anticipated to be less than 14 feet bgs. PSC anticipates using basic benching and/or sloping methods to excavate and remove the drum(s) in this area.

5.3 Phase 3 Excavation

Excavations are anticipated to be less than 14 feet bgs. PSC anticipates using basic benching and/or sloping methods to excavate and remove the drum(s) in this area. No shoring is anticipated for this Phase

This area will involve excavation activities to remove, load, and dispose of sludge-type material impacted with MEK's and toluene. PSC has assumed that the sludge will pass a paint filter test and can be direct loaded into roll-off boxes for profiling and disposal. The need for some type of solidification agent may be necessary and will be added as required. The sludge is expected to be odorous therefore foam odor suppressant will also be applied as necessary. All roll-off boxes used will be tarped or covered.

5.4 Drum Removal Excavation Activities

Excavation to uncover drums will be completed using a variety of methods including: conventional excavation, air excavation, and manual excavation. Once drums and drum contents are safely removed the drums will be placed into the drum containment area for further sampling and subsequent transportation and disposal.

6 ASBESTOS MONITORING

PSC will have a subcontracted licensed Colorado Asbestos Inspector onsite during all excavation activities. Their job will be to identify any suspect asbestos-containing materials (ACM's) that could be encountered during excavation work. If the inspector determines ACM's have indeed been uncovered than excavation activities will cease in that area while abatement of ACM's take place by a separate licensed subcontractor. Excavation activities will be moved to a different area if applicable otherwise excavation work will be shutdown until abatement is complete.

ASBESTOS CONTAMINATED SOIL MANAGEMENT

This section of the Site Management Plan (Plan) outlines the asbestos management procedures required by 6 CCR 1007-2 Section 5.5.7. Additional work practices that will be used in conjunction with the procedures in the section are provided in the Plan. This section of the Plan, identifies the standard procedures to ensure the work practices and tasks described in the Plan reduce the potential for asbestos fiber release from the area during project implementation.

In the event that facility components are encountered that must be abated in accordance with Colorado's Air Quality Control Commission (AQCC) Regulation No. 8 Part B – Asbestos. All regulated asbestos contaminated soil (RACS) shall be managed in accordance with the CDPHE Regulations Pertaining to Solid Waste Sites and Facilities 6 CCR 1007-2. These RACS-management procedures are designed to comply with the Standard Requirements for the Disturbance of RACS found in Section 5.5.7 of 6 CCR 1007-2.

6.1 ESTABLISHING REGULATED WORK AREAS

One large work area shall be set up for the main excavation and regrading activities per the Drum Removal Work Plan. Smaller regulated work areas (RWAs) will be established for controlled work zones when asbestos-disturbing activities occur. Proper labeling and adequate signage will be posted to demarcate the RWA(s). Labeling and signage will indicate the presence of asbestos, and that the area is off limits to unauthorized and untrained personnel. Each RWA will be demarcated by visible means that fully defines the extent of the RWA to prevent inadvertent exposure to site personnel and cross-contamination.

6.2 TRAINING REQUIREMENTS

All planned soil disturbing activities will be conducted in the presence of a Certified Asbestos Building Inspector (CABI) trained in accordance with Section 5.5.3.D of 6 CCR 1007-2, Regulations Pertaining to Solid Waste Sites and Facilities. All CABIs shall have a minimum forty (40) verifiable hours of on the job asbestos in soils experience on a minimum of three (3) different asbestos in soils projects, conducted under either AQCC Regulation No. 8 or Section 5.5. The CABI shall be independent of the remediation contractor and/or asbestos abatement contractor. A CABI will be present at every ongoing soil-disturbing work activity involving RACS or other waste material and will be responsible for determining the friability of ACM encountered for offsite disposal.

All contractor and subcontractor personnel that will be overseeing, directing, inspecting and/or handling RACS (including suspect or assumed asbestos soils) will have, at a minimum, and

as appropriate to the work activity, the following training and experience per Section 5.5.3 of 6CCR 1007-2, Part 1 *Training*:

- Individuals overseeing, directing, inspecting and/or performing soil-disturbing activities in areas where asbestos has not been identified, but where there is reason to suspect that asbestos may be encountered, are required to complete two-hour on-the-job asbestos-contaminated soil awareness training. This training will include site specific hazards and asbestos occurrences on, and in the vicinity, of the site. The training will provide the information necessary to ensure individuals perform their duties in compliance with the RACS management requirements of 6CCR 1007-2, Part 1, Section 5.5.3.A. This 2-hour awareness training will be conducted by a CABI.
- Individuals performing soil-disturbing activities in an area with known or assumed RACS will complete the 2-hour Occupational Safety and Health Administration asbestos awareness training set forth at 29 Code of Federal Regulations (CFR) 1926.1101(k)(9)(vii), and the on-the-job asbestos-contaminated soil awareness training described in Section 5.5.3.B of 6CCR 1007-2, Part 1. This additional training applies to excavation equipment operators, laborers working in the asbestos RWA or in close proximity of active soil disturbing activities, field spotters, field workers operating spraying/misting system at the working face of the excavation, and/or spraying at the load out station. Appropriately trained asbestos workers will conduct planned soil disturbing activities in known contaminated areas in the presence of a CABI.
- Individuals performing inspection, identification, limited quantity hand removal, and/or sampling of ACM or asbestos in soil will be a CABI with a minimum of 40 verifiable hours of on the job asbestos in soils experience on a minimum of three different asbestos-in-soils projects, conducted under Air Quality Control Commission (AQCC) Regulation No. 8 (5 CCR 1001-10, Part B) or Section 5.5 of 6 CCR 1007-2, Part 1 (the Solid Waste Regulations). All individual certifications as well as a resume documenting projects involving asbestos in soil inspection will be maintained onsite for review before the individual is allowed to conduct onsite work. Hand removal may also be performed by workers who have received the additional site specific asbestos training per Section 5.5.3.B of 6CCR 1007-2, Part 1.
- An Air Monitoring Specialist with current Colorado Department of Public Health and Environment (CDPHE) certification, issued in accordance with AQCC Regulation No. 8 shall perform all air monitoring required by Section 5.5.7.E of 6CCR 1007-2, Part 1. OSHA-required personal air monitoring may be conducted by anyone who meets the requirements of a competent person under OSHA's *Subpart C, General Safety and Health Provisions for Construction* (29 CFR Part 1926.20) and has completed a comprehensive training course for contractors and supervisors certified by the U.S. Environmental Protection Agency (EPA) or a state-approved training provider.
- All soil disturbing activities will cease if support staff without the appropriate level of asbestos awareness training enter the RWA. The exception is a truck driver or passenger who remains in the cab of the truck with the truck's windows and doors closed and the air handling system off while the truck is inside the RWA.

6.3 PLANNED SOIL-DISTURBING ACTIVITIES

Soil-disturbing activities on the site may include security fence and road installation, driving of vehicles or equipment across the soil surface, hand removal of ACM, potholing and

exploratory excavation, well abandonment, soil grading and backfilling, drilling and auguring, installing groundwater BMPs, sub-surface soil sampling, placement of landfill cover soils, and personnel and equipment decontamination. Moving non-mechanized equipment (e.g., wheelbarrow, cart etc.) across the surface will not constitute planned soil-disturbing activities; however, a CABI will escort or conduct a visual inspection of the soil surface to confirm that the proposed path is clear of visual ACM, in accordance with Section 6.9.3.2 below, and the equipment will be decontaminated before removal from the site.

6.4 EXCAVATIONS

Excavation, grading, or placement of soil will occur according to this Plan. The main areas of excavation will include the identified drum and sludge corridors. RWAs, decontamination stations, truck lining stations, haul roads and vehicle tracking pads will be set up and maintained according to the approved SWMP. Once contaminated, trucks and equipment will be kept, to the extent feasible, on the contaminated areas within the RWA. Equipment and trucks leaving contaminated areas will be decontaminated, as described in Section 6.9.7. All work will be conducted in accordance with the following protocols.

ACM INSPECTIONS

All work areas will be pre-inspected by the CABI prior to commencement of soil disturbance activities for suspect surface asbestos-containing materials (ACM). During excavation, the CABI will conduct a subsurface visual inspection for suspect asbestos-containing material as excavating proceeds. The CABI will provide guidance to the personnel performing the excavations with regards to the level of emissions control (such as wetting) and waste segregation and management.

Wetting of RACS

Pre-wetting will be conducted, as needed, in RACS areas scheduled for excavation. Pre-wetting will be sufficient to adequately wet at least the top six inches of RACS without over-wetting the area. The application rate will be monitored to ensure that no sheet wash occurs outside of the excavation area or engineered landfill cover area. Water will be applied to control dust without creating additional site hazards, such as run-off to surface water or muddy ground surfaces that could present slip and fall hazards.

- 1) All RACS and soils, or other materials containing RACS, on the surface and in the sub-surface prior to and during RACS disturbance will be kept adequately wet to avoid dust or visible emissions. Water will be applied at low pressure in order to minimize dust generation and splattering to prevent visible emissions from leaving the RWA. For areas with friable ACM, amended water containing a wetting agent, such as a 50:50 mixture of polyoxyethylene ester and polyoxyethylene ether, or the equivalent, in a 0.16 percent solution (1 ounce to 5 gallons) of water will be used if necessary.
- 2) Misting of RACS and soils, or other materials, containing RACS will be conducted during disturbance, e.g., placement in fill areas or into staging piles, stockpiles, or trucks as needed to maintain the material in an adequately wet condition using equipment mounted spray bars, or additional hose operator(s).
- 3) If at any time fugitive dust emissions are observed outside of the RWA, all soil disturbing activities will immediately cease until the work practices are altered so as to prevent further generation of dust emissions. All instances of visible emissions leaving the RWA shall be documented as required in the CABI and AMS notes. DS will notify

CDPHE if there are multiple (three or more) occurrences of visible emissions outside of the RWA.

During soil disturbance outside of RACS areas, minimal wetting will be conducted for general dust control. Water mist will be applied via hand-held or equipment-mounted sprayers or misters to prevent visible emissions during loading of any waste for off-site disposal. Water will be applied in quantities and at a pressure that does not cause splattering. Run-off water will be constrained to the excavation areas. At no time will inadequately wetted soil or waste be removed from the ground; the CABI will notify the excavation personnel if soil or waste is inadequately wet, and the excavation personnel will be responsible for applying additional amended water until the soil or waste is determined by the CABI to be adequately wet.

If daily air monitoring results indicate that the generation of airborne asbestos, the wetting practices and other engineering controls and work practices will be reviewed with CDPHE to determine the changes to be made to ensure protection of workers and possible off-site receptors.

Wind Barriers

Moveable/portable wind barriers may be placed upwind and immediately adjacent to the point of excavations for RACS management, on up to four sides of the active RACS excavation area, and can be moved around, as needed, to minimize wind dust dispersal at the point of excavation. Local, wind barriers can include portable, chain-link fence panels fitted with fabric material reduce windspeeds inside the RWA. Fence panels can be anchored by inground posts or weighted with sand bags, depending upon wind conditions and expected loads.

Waste Segregation and disposal

Disposal of RACS will be conducted in accordance with the requirements included in Section 5.5.8 of the Solid Waste Regulations. RACS will be loaded in a manner that will minimize spillage, including not overfilling the excavator bucket and returning the bucket to a closed position prior to moving to the loading point. Any spilled material will be cleaned up immediately, in accordance with Section 6.9.2 of this plan. During the process of loading, the equipment operator shall lower the bucket as close as possible to the interior of the truck bed before dumping, and dump the load slowly to allow adequate misting and in order to prevent visible emissions from leaving the RWA. Waste disposal categorization will not diminish inspection requirements or exposure mitigation protocol.

- RACS containing more than one percent (1%) friable ACM (as determined in the field by a CABI based on visual estimation through continuous visual inspection) by volume, per load or container will be disposed in a leak tight container (i.e. double lined truck) as friable asbestos waste in accordance with the requirements of Section 5.3 of the Solid Waste Regulations.
- RACS containing nonfriable ACM, or less than one percent (1%) friable ACM (as determined in the field by a CABI based on visual estimation through continuous visual inspection) by volume, per load or container, will be disposed of in a leak tight container (i.e., single lined truck) as nonfriable asbestos waste in accordance with Section 5.2 of the Solid Waste Regulations.

6.5 WASTE MANAGEMENT

The following protocol will be utilized to manage waste generated onsite. RACS containing less than 1% friable ACM or less than 1 pound of friable ACM per load, as determined

through CABI visible estimation, will be placed into haul trucks with a single liner and disposed as non-friable asbestos waste in accordance with 6 CCR 1007-2, Part 1 Section 5.2 at a landfill permitted by CDPHE to accept asbestos waste (see Sections 5.4 and 5.5). RACS containing more than 1% friable ACM or more than 1 pound of friable ACM per load, as determined through CABI visible estimation, will be placed into haul trucks with two liners and disposed as friable asbestos waste in accordance with 6 CCR 1007-2 Part 1 Section 5.3 at a landfill permitted to accept asbestos waste by CDPHE. See Sections 5.2 and 5.3 of 6 CCR 1007-2, PART 1 in the Colorado Solid Waste Regulations for disposal requirements.

Onsite Staging, Stockpiling, and Storage of RACS

Excavated RACS not directly loaded into haul trucks or a rolloff container will be placed onto plastic sheeting or onto areas of known asbestos contamination, kept adequately wet and stabilized per Section 5.5.7.H of the solid waste regulations. The piles will be covered with plastic sheeting to prevent fugitive dust or will be kept adequately wet at all times. If plastic sheeting is used, it will be secured and weighted down on all sides. When the excavation has been backfilled with clean fill material or the excavated materials otherwise properly disposed, the plastic will be bagged and disposed of as non-friable asbestos waste.

Staging is the accumulation and temporary storage of RACS in the RWA for 12 hours or less. The following protocols will be applied during staging of RACS:

- a. Staged RACS will be kept adequately wet and placed on 6-mil, or greater, polyethylene sheeting. If the RACS material is staged on the ground surface, a minimum of three inches of material below the staging pile will be removed and managed as RACS before demobilization, with visual or measured (e.g.; survey) confirmation of removal by a CABI. If polyethylene sheeting is placed on top of the hard surface, the surface will be decontaminated using wet methods, followed by CABI inspection verifying that all soil and debris has been removed from the surface. Rinsate/runoff will be collected and filtered to less than 5 microns and discharged to a sanitary sewer with the approval of the local municipality/service provider or re-applied to RACS that is being managed for future removal.
- b. Soil determined to be clean during generation will be reinspected during placement for staging onsite for beneficial reuse. If incidental discovery of RACS is encountered during staging, the material will be managed as follows:
 - i. If a CABI was continually inspecting the material during generation, the piece of ACM or pocket of ACM and one foot of material in all directions will be removed with CABI confirmation that the visible extent of RACS has been removed. Material that remains after removal of RACS, and CABI visible confirmation, is not considered RACS and may be appropriate for unrestricted reuse, onsite or offsite, as long as it does not contain any other regulated material.
 - ii. If a CABI was not continually inspecting the material during generation, an intrusive inspection of the pile will be conducted to determine the extent of RACS contamination, followed by the removal of the visible extent of contamination plus removal of one foot of material in all directions. Alternatively, the entire pile, plus three inches of material below the pile, will be removed and managed as RACS. If the pile was placed on top of a hard surface, the surface will be decontaminated using wet methods, followed by CABI inspection verifying that all soil and debris has been removed from the surface. Rinsate/runoff will be collected and filtered to less than 5 microns

and discharged to a sanitary sewer with municipality/service provider approval or re-applied to RACS that is being managed for future removal.

- 1) Stockpiling, is the accumulation and storage of RACS that will exist for more than 12 hours, up to and including 10 calendar days. The following protocols will be applied during stockpiling of RACS:
 - a. Stockpiled RACS will be placed on a minimum of 6-mil polyethylene sheeting or, if placed on the ground surface, will include removal, and management as RACS, of a minimum of three inches of soil, or other matrix material, from under the entire area of the RACS stockpile. If the stockpile was placed on top of a hard surface, the surface must be decontaminated using wet methods, followed by CABI inspection verifying that all soil and debris has been removed from the surface. Rinsate/runoff will be collected and filtered to less than 5 microns and discharged to a sanitary sewer with municipality/service provider approval or re-applied to RACS that is being managed for future removal. RACS shall be adequately wet during all disturbance.
 - b. Stockpiled RACS will be controlled as an RWA.
 - c. Stockpiled RACS will be stabilized by:
 - i. Polyethylene sheeting or geotechnical fabric with daily inspection, and inspection no later than 12 hours following storm events, and repair/replace sheeting as necessary to maintain stabilization; or
 - ii. Chemical stabilizer demonstrated to be effective in the stabilization of RACS (such as magnesium chloride) with weekly inspection, and inspection no later than one calendar day after storm events, and re-application of chemical stabilizer as necessary to maintain stabilization; or
 - iii. Minimum of three inches of soil appropriate for unrestricted use.
 - d. If RACS is discovered in a stockpile that is being managed as clean the procedure outlined in Section 6.6.1(b) of this Plan will be followed.

Storage of RACS exceeding 10 calendar days shall adhere to a RACS Storage Plan approved by CDPHE. Onsite storage of RACS in excess of 10 calendar days shall not commence prior to final approval of the RACS Storage Plan by CDPHE.

Documentation stating that the soil originating from the site will not be used as a daily cover or sold as clean fill will accompany each load of RACS removed from the site. Clean soil inspected by a CABI, can be beneficially reused in fill areas according to the design. The clean soil piles will be controlled from runoff by BMPs, such as berms or weirs, according to the SWMP so that the soil is contained within the designated clean stockpile area. The stockpiles can be sprayed with magnesium chloride for stabilization or covered with plastic or geotextile to prevent runoff and wind erosion.

Open Excavations and Fill Areas

Any excavation face or fill area with identified RACS that will remain exposed over 12 hours will be covered by geotechnical membrane or covered with clean soils, or encapsulant, or equivalent, to prevent wind-blown asbestos fibers from emanating from the trench. All excavation faces and fill areas will be inspected daily and after any high wind events (gusts greater than 20 mph or sustained winds of 12 mph or greater) to ensure that the coverings are securely in place.

RACS on exposed excavation faces and fill areas that will be disturbed and/or managed during the project shall either be kept adequately wet (in accordance with Section 5.5.7(C) of the Solid Waste Regulations), or be stabilized using any of the following in order to prevent visible emissions from leaving the RWA:

- i. Polyethylene sheeting or geofabric with daily inspection, and inspection no later than twelve (12) hours following a storm event, and repair/replace sheeting as necessary to maintain stabilization; or
- ii. Chemical stabilizer demonstrated to be effective in the stabilization of RACS (e.g. magnesium chloride) with weekly inspection, and inspection no later than one (1) calendar day following a storm event, and re-application of chemical stabilizer as necessary to maintain stabilization; or
- iii. Minimum of three (3) inches of soil appropriate for unrestricted use.

Remaining RACS

Where RACS is present in the sidewall, or the base of an excavation and the vertical and/or horizontal extent of the excavation is complete, the RACS will be covered with a geotextile barrier or similar protective barrier and covered with clean soils that meet the structural and/or cover requirements for the site. Caution will be exerted during backfilling, compacting and covering to minimize the potential for causing asbestos fibers to become airborne. Where RACS is identified in the bottom of the excavation or sidewall, the material will not be "chased."

6.6 proposed exposure mitigation and asbestos fiber control measures

Protection of Clean Equipment and Surfaces:

Clean surfaces will be protected from coming in contact with RACS by covering equipment surfaces or RACS surfaces with polyethylene sheeting or equivalent durable impermeable covering. For onsite movement of excavation equipment between RWAs, where only the excavator bucket has come in contact with RACS, the bucket shall be wrapped in polyethylene sheeting (minimum 6 mil) prior to movement. Protective coverings shall be cleaned, repaired, or replaced as necessary. If protective coverings are breached and RACS or asbestos contaminated water comes into contact with underlying material, the RACS Spill Response provisions of Section 6.7.2 below shall be followed. Coverings that have come in contact with RACS shall be disposed as asbestos contaminated waste.

RACS Spill Response

Clean areas or surfaces which have come into contact with RACS are subject to the following:

- Areas where RACS is spilled are RWAs until clean-up has been completed and signed off on by a CABI.
- Spilled material shall be cleaned up immediately and not allowed to dry out or accumulate on any surface. The Department's Hazardous Materials and Waste Management Division shall be notified in the event that spills of RACS cannot be cleaned up within 24 hours of spill identification.
- Where there are breaches in ground coverings that have the potential to allow RACS or water contaminated with asbestos to impact the material below the covering, a minimum of three (3) inches of soil, or other matrix material, shall be removed from beneath the breached ground coverings. Visual or measured (e.g. survey) confirmation that three (3) inches of soil and/or other matrix material from beneath the breached covering has been removed shall be conducted. If ground coverings are

placed on top of a durable surface such as concrete or asphalt, the surface shall be decontaminated using wet methods, followed by CABI inspection that all soil and debris has been removed from the surface.

- Rinsate, runoff, or any other water that has come into contact with RACS shall be considered to be asbestos contaminated water and shall be collected and filtrated to less than 5 microns and discharged to a sanitary sewer or other EPA and CDPHE-approved disposal facility or re-applied to RACS that will be managed under these regulations.
- Surfaces that are contacted by asbestos contaminated water shall be managed as RACS, and either removed or covered in accordance with this Plan.
- If work practices in an RWA are causing an ongoing spill outside the RWA, the work practices shall cease or be modified to prevent additional releases.

Site Access Restrictions

Access to the site and to RWAs shall be restricted to authorized personnel. Site access restrictions shall include:

- Access to the site shall be controlled by the contractor's project manager, and shall be restricted to persons having a specific need to enter the work area, to prevent unauthorized access by individuals not involved with the work.

Lighting

Although the excavation schedule has not been determined, it remains a potential that excavation activities may be conducted at night. Therefore, initial equipment and facilities may require lighting, including yard lights near the gates, staging, and excavation areas. Continuous visual inspection for soil and waste characterization will only be conducted when there is adequate lighting for a CABI to make an accurate determination.

Air Monitoring Plan

No air monitoring is required for RACS disturbance that will not exceed a duration of two (2) days. However, the requirements for adequate wetting under Section 5.5.7(C) of the Solid Waste Regulations and no visible emissions leaving the RWA required by Section 5.5.7(F) of the Solid Waste Regulations shall be adhered to on all RACS disturbance projects. Dividing projects into multiple two (2) day or shorter components shall not be used as a mechanism to avoid air monitoring requirements.

Air monitoring for asbestos will consist of RWA perimeter monitoring. The purpose of the RWA monitoring is to evaluate the effectiveness of the engineering controls. Any air monitoring collected on personnel will be by for compliance with OSHA regulations only. Air monitoring shall be required during mechanical disturbance of RACS in RWAs to verify that asbestos fibers are not leaving the RWA and to evaluate the effectiveness of the engineering controls onsite. Soil disturbing activities in areas outside of the footprint of the landfill, not known to contain RACS, will not require air monitoring.

Area monitoring will consist of a minimum of four samples collected on the perimeter of the RWA in each of the four (4) cardinal directions at appropriate intervals to provide representative information regarding potential releases of asbestos fibers to the adjacent receptor zone(s). Additional samples will be collected for RWAs greater than one acre at a rate of one sample for approximately 200 linear feet (or approximately each additional ¼ acre). Additionally, when mechanically disturbing RACS containing friable ACM, two downwind floater samples are required per the Solid Waste Regulation, Section 5.5.7(E)(3).

- a. All samples will be analyzed by Phase Contrast Microscopy (PCM) by accredited laboratories. The laboratory will provide verbal results to the Air Monitoring Specialist (AMS) or the PM by the start of the next working day, or as soon as possible after the start of the next working day, with written results within 24 hours of the receipt of verbal results.
- b. If the lab reports a CBR (cannot be read) or a NA (not analyzed or rejected) sample result due to loose debris or uneven loading:
 - i. The AMS will evaluate the lab report and any field documentation to determine a possible cause for the CBR or NA result.
 - ii. If the CBR or NA cannot be correlated to a specific field event that compromised the sample (e.g. the sample was blown over, the filter of the sample was sprayed with water) then the sample will be prepared for indirect transmission electron microscopy (TEM) presence/absence analysis to determine potential asbestos content in accordance with the Solid Waste Regulations, Section 5.5, Appendix 5A. All CBR/NA sample results will be discussed with the CDPHE representative within 24 hours and before further actions can be taken.
 - iii. If the CBR or NA analysis result can be correlated to a compromised sample, then preparation for indirect TEM presence/absence analysis will not be required as long as adequate air monitoring data is available to evaluate the effectiveness of the engineering controls. However, overloading of a sample with particulate matter does not constitute a compromised sample, and will require indirect preparation for TEM presence/absence analysis.
 - iv. Field personnel will evaluate why the sample was compromised and modify the field procedures as necessary to avoid future samples from being compromised.
 - v. The CDPHE representative will be notified by phone or email of instances of CBR or NA analysis results by the start of the next working day or as soon as possible after the start of the next working day.
- c. TEM presence/absence analysis is required (analysis providing fiber counts/concentrations is always optional) as described in paragraphs (i) through (iv) below. The laboratory will provide verbal results, including informational samples, by the start of the next working day, or as soon as possible after the start of the next working day, with written results within 24 hours of the receipt of verbal results.
 - i. All samples with PCM results having fiber concentrations greater than 0.01 fibers per cubic centimeter (f/cc) will be submitted for TEM analysis.
 - ii. During the first five days of RACS disturbance – A minimum of 25 percent (daily minimum of two samples) of the samples collected from each RWA, inclusive of the downwind floating samples will be submitted for TEM analysis. The sample(s) selected for TEM analysis will have the highest PCM result(s) based on fiber concentration. In addition, if any sample contains greater than 0.01 f/cc it will be submitted for TEM analysis. If all PCM results are Below Detectable Limit (BDL) for fiber concentration, then the sample(s) selected for TEM analysis will be the highest fiber count. If all samples have no fiber counts (i.e. zero fibers counted, not a BDL fiber concentration) then no TEM analysis is required.
 - iii. After five days of RACS disturbance with no asbestos detections by daily TEM analysis, the frequency of analysis by TEM will be reduced to two days

- of the work week randomly selected by the AMS. The samples submitted for TEM analysis during the period of reduced frequency TEM analysis will be either the first occurrence of: 1) high winds exceeding wind shut down criteria, or 2) visible emissions. In the absence of high wind events or visible emissions the selected day for TEM analysis will be random, as determined by the AMS. On days where no TEM analysis is planned, any sample with fiber counts greater than 0.01 f/cc will be analyzed by TEM.
- iv. If there are any asbestos detections during the random twice every five days of RACS disturbance analysis by TEM, then TEM analysis will be conducted for the next three consecutive days of RACS disturbance, or portions thereof, using the same procedures as in paragraph (i) and (ii) above. If there are no additional asbestos detections during the next three consecutive days of RACS disturbance with samples submitted for TEM analysis, then the frequency of TEM analysis may return to random once every five days of RACS disturbance.
 - v. If site conditions, friability of the materials being managed, or work practices change, then the initial five days of TEM analysis will restart.
- d. For each detection of asbestos by TEM analysis, the following will be conducted:
- i. Notify the CDPHE representative by phone or email, on the same calendar day as receipt of verbal or written results (whichever comes first) from the laboratory.
 - ii. Evaluate site conditions and engineering controls for each detection, and immediately implement any identified engineering control revisions necessary to prevent future detections of asbestos fibers. If a second occurrence of asbestos fibers is detected, all soil-disturbing activities will cease and a control plan as described below will be developed for approval by CDPHE.
 - iii. Submit an Emission Control Plan (ECP) to the CDPHE representative for each detection (days with multiple detections can be addressed by a single ECP). The ECP will be submitted within 48 hours from the asbestos detection event and will contain:
 - 1) The date of the detection.
 - 2) A written description of sample details (sample identification, number of structures detected, type of asbestos detected, PCM analytical result) and any potential cause of the release. The ECP will include a description of site activity, (engineering controls being employed, equipment being used, size of excavation/soil disturbing activity, types of materials identified, etc.) and CABI observations at the work area before and during the presumed time of release.
 - 3) A diagram or write up of all air sample positions clearly indicating which sample received the TEM detection. The diagram will indicate prevailing wind direction and average wind speeds for the detection event and any wind speed shutdowns for the date of detection.
 - 4) The lab reports confirming the type and amount of fibers detected by TEM analysis.
 - 5) Other pertinent information that will additionally describe the release and/or will assist in the prevention of future releases from the RWA.
 - 6) A written description of actions taken and any other proposed actions with the goal of preventing future releases from the RWA.

7) Potential offsite sources of asbestos fibers and supporting documentation.

- e. If there are three TEM detections on consecutive analysis events or 10 detections for a single project, CDPHE will be consulted to determine if changes to the MMP are required. If the source of the asbestos fibers is believed to be offsite, additional air samples will be collected to determine the offsite source and determine if additional engineering controls are required.

6.6.1.1 Sampling Media

Air samples submitted for phase contrast microscopy (PCM) shall be analyzed according to the National Institute for Occupational Safety and Health (NIOSH) 7400 Method. PCM samples will be collected by drawing air through a 25-millimeter mixed cellulose ester filter, 0.8-micron pore size, with an open-faced, long cowl using low-flow personal sampling pumps. The flow rate and the volume of air passed through the filter will be determined based on the NIOSH 7400 analytical method. Each pump will be calibrated before and after the collection of each sample using a primary standard.

6.6.1.2 Sample Analysis

Sample analyses will be performed by a trained and certified microscopist using a phase contrast microscope according to the NIOSH 7400 Method. The microscopist will be a participant in the NIOSH Proficiency Analytical Testing Program and will have been deemed proficient. Analyses of transmission electron microscopy (TEM) air samples will be submitted to a National Institute for Standards and Technology National Voluntary Laboratory Accreditation Program accredited laboratory using TEM according to Asbestos Hazard Emergency Response Act protocol.

Emissions Control Plan

The following actions will be undertaken to prohibit visible emissions from leaving RWAs any time soil disturbing activities are taking place:

6.6.1.3 Wind Speed Monitoring and Work Stoppage Conditions

Wind speed measurements will be taken during all RACS disturbing activities at 30-minute intervals for a duration of 10 minutes, so that a 10-minute average wind speed can be determined, or more frequently if winds are approaching threshold values. Average wind speed measurements shall be obtained manually by taking ten readings at one-minute intervals and averaging the ten readings, or through the use of instrumentation that provides a 10-minute average wind speed reading. The time and wind speed shall be logged by the AMS. All wind speed measurements will be taken with a hand held instrument in close proximity to, and representative of, the work area in which the soil disturbing activities are taking place. If wind break barriers are used, wind speed measurements may be taken from within barriers; however, wind speed measurements shall also be taken outside the wind break barriers if any RACS disturbing activities, such as loading, are taking place outside or above the barriers. Wind speed shut-down criteria shall be based on measurements taken that are representative of the area of active RACS disturbance.

Work Stoppage Conditions:

Immediate stoppage of all RACS disturbance shall occur based on results of wind speed monitoring conducted in accordance with subsection (a) and exceedance of the following criteria:

- i. Wind gust(s) in excess of 20 mph, or
- ii. Sustained winds in excess of 12 mph, averaged over ten (10) minutes, or
- iii. Winds are interfering with the ability of engineering controls to work as intended, or
- iv. Winds are creating visible emissions that leave the RWA.

Work Commencement Conditions:

RACS disturbance may resume when all of the following criteria are met:

- i. No gust(s) in excess of 20 mph occur for twenty (20) minutes, and
- ii. No sustained winds in excess of 12 mph occur for twenty (20) minutes, based on a ten-(10) minute average wind-speed measurement, and
- iii. Winds are not interfering with the ability of engineering controls to function as intended, and
- iv. Winds are not creating visible emissions that leave the RWA.

6.6.1.4 Site Access and Vehicle Movement

Only appropriate construction equipment and vehicles (e.g., excavators, graders, front end loaders, compactors, dump trucks, ground-penetrating radar, etc.) will be allowed to drive within the landfill RWAs. All other vehicles (e.g., pickup trucks, delivery vehicles, etc.) will be restricted to clean haul roads, laydown areas, and other areas outside of the RWA. All vehicles will be required to drive in a slow and cautious manner to avoid visible emissions and will be under the oversight of a CABI.

Please refer to the Drum Removal Plan for detailed information regarding types of equipment, work methods, and engineering controls. Work practices to be followed during RACS disturbance shall adhere to this Plan and Section 5.5.7.F of the Colorado Solid Waste Regulations.

6.7 Decontamination Procedures

A decontamination facility may be installed at the site for full decontamination of equipment and vehicles demobilizing from the asbestos RWA that have come into contact with RACS. Temporary decontamination facilities may be established for personnel and partial decontamination of equipment as needed. Please refer to the Drum Removal Plan for numbers, locations and types of personnel and equipment decontamination facilities. All disposable PPE, tools and materials used during asbestos decontamination (booties, protective coveralls, plastic sheeting, latex gloves, brushes, brooms, etc.) will be disposed of as non-friable asbestos-contaminated waste (ACW), at a licensed landfill. All asbestos contaminated waste and RACS disposal will be conducted in accordance with 6 CCR 1007-2, Sections 5.5.2 and 5.5.3.

6.8 Decontamination

The general contractor and all subcontractors shall verify their equipment is free of contamination prior to mobilization to the jobsite. To the extent possible, trucks hauling RACS offsite will be kept off RACS, and surfaces of trucks will be protected against contact with RACS. Each truck loaded with waste will be visually inspected prior to leaving the RWA. Any haul trucks exhibiting visible contamination will be decontaminated before leaving the regulated work area. If necessary, the outer surfaces of the truck will be scraped with a shovel or similar tool and, where appropriate, brushed with brooms or stiff bristle brushes

while being sprayed with clean water to prevent contamination from leaving the RWA. If trucks have driven on RACS, the tires will be thoroughly decontaminated prior to leaving the site.

Equipment that is demobilized from the site after being used for excavation and/or material handling will be decontaminated at a heavy equipment decontamination pad constructed on site in compliance with Section 5.5.7.1 of the Colorado solid waste regulations, and as described in this section and Section 6.8.1 of this plan. Decontamination of tools and small equipment can be performed using wet-wiping and HEPA vacuuming followed by CABI inspection and verification of equipment decontamination before it leaves the decontamination area. Potentially contaminated materials will be removed from large equipment by scraping with a shovel or similar tool and, where appropriate, by brushing with brooms or stiff bristle brushes while spraying with clean water. Decontamination materials that accumulate at the decontamination pad will be picked up and placed in a designated container until it can be loaded on a truck with similar waste.

Equipment Decontamination

All vehicles that enter areas of the an asbestos RWA that have not been covered by clean fill or excavated to clean soil, will be decontaminated upon leaving the RWA or upon moving from contaminated areas to clean areas. Equipment decontamination will be performed using the following procedures, which may be refined as necessary for individual applications. All modifications will receive CDPHE approval prior to implementation.

- All equipment that contacts RACS will be decontaminated prior to leaving the soil removal work area or when the equipment moves from a contaminated to a clean area. No tracking will occur from the RACS areas to other areas unless the soils within the other areas are RACS or will be subsequently removed as RACS. Wet decontamination on a decontamination pad (minimum 10-mil poly or other durable non-permeable barrier) followed by CABI inspection and verification of equipment decontamination shall be performed before the equipment leaves the decontamination area.
- If the equipment operates within a known contaminated area, the parts of equipment that came into contact with the contaminated soil shall also be considered contaminated. Prior to moving this equipment from the contaminated area into clean areas, the contaminated components will receive a full, wet decontamination at the decontamination facility. The rinsate from the decontamination will be collected, filtered to 5 microns, and either discharged to the sanitary sewer or used on RACS that will later be excavated or covered.
- If the equipment tracks require decontamination, the operator will use the bucket to lift the tracks for the decontamination process. Once the tops of the tracks have been cleaned, then the machine will roll forward. The remaining portion of the tracks will be washed down, and the operator will again roll forward. The equipment will then be inspected for visible soil by the operator and/or site supervisor and cleared or re-cleaned until no visible soil is observed. A CABI will provide final approval for the decontamination of the equipment.
- Final decontamination of portions of the heavy equipment potentially exposed to contamination will be pressure washed using potable water at the decontamination facility. Special attention will be given to removing any soil or other site-related foreign materials on the equipment. While pressure washing, care will be taken to ensure contaminated materials or liquids do not leave the decontamination pad. The rinsate from the final decontamination procedure will be collected, filtered to 5 microns, and

either discharged to the sanitary sewer or used on RACS that will later be excavated or covered.

- All personnel will wear the appropriate PPE during decontamination activities. All PPE will be discarded at the end of the work shift when personnel leave the site. The PPE will be placed in properly labeled 6-mil plastic bags for disposal as asbestos contaminated (non-friable asbestos waste) at a licensed landfill permitted to accept this material. Any non-disposable PPE that came in contact with RACS or decontamination fluids will be decontaminated with water prior to leaving the decontamination area.
- All equipment and tools (e.g., brooms, brushes, shovels, chisels, etc.) will be decontaminated with water prior to leaving the boundary of the RWA or at the end of each shift. At the end of the project, all disposable or otherwise uncleanable materials associated with the equipment decontamination area will be removed and disposed of as non-friable ACW.
- For breaches in the decontamination pad where RACS or water contaminated with asbestos may have impacted the material below the decontamination pad, the provisions of Section 6.7.2 *RACS Spill Response* of this plan shall be implemented.

The decontamination of vehicles will consist of having the tires and other parts which encounter RACS rinsed using a hand-held wand or pressure spray so that water runs off the part along with all soils and potential asbestos fibers. All decontamination will be conducted within the decontamination facility, except for the rolling decontaminations.

If an excavator, loader, bulldozer or other large pieces of equipment are required to work on contaminated soil the excavator equipment will be decontaminated within a decontamination station or catch basin, constructed out of 10-mil polyethylene sheeting and at least 12-inches deep for the purposes of collection and filtration of the water generated during the decontamination process. All decontamination liquids and solids will be contained, and run-on and run-off shall be prevented. Rinsate/runoff will be collected, filtered to less than 5 microns and discharged to a sanitary sewer with municipality/service provider approval or re-applied to RACS that is being managed for future removal.

If the decontamination pad is breached or otherwise not performing its intended function of collecting waste and providing a barrier to underlying material, then the decontamination pad will be repaired in a timely fashion. If the pad is damaged and potential contaminants of concern have, or may have, cross-contaminated underlying material, then over-excavation in the area of the damaged pad will be conducted.

All disposable PPE, tools and materials used during decontamination (booties, protective coveralls, plastic sheeting, latex gloves, brushes, brooms, etc.) will be disposed of as non-friable asbestos waste, at a licensed landfill.

PPE and Personnel Decontamination

Personal protective equipment (PPE) shall be required on the jobsite at all times per all applicable OSHA construction standards as well as Section 5.5.7.B. of the Colorado solid waste regulations. All personnel working in the RWA will wear protective suits, booties, gloves, and standard level "D" PPE while in the work area. All other personnel will, gloves, and standard level "D" PPE while on the jobsite outside of the RWA. In the event that work is in an area of identified RACS or if friable asbestos is encountered, appropriate respiratory protection shall be used by trained and medically cleared personnel within the RWA. At a

minimum, this will include the CABIs and AMSs, the backhoe and loader operators, the personnel spraying the working face with water, truck wrapping and decontamination personnel, and others identified by the Site Health and Safety Officer as requiring PPE. Personal decontamination procedures will be conducted as follows:

1) Non-Friable RACS Personnel Decontamination:

- a) Disposable suits, booties and/or gloves shall be removed before exiting RWA and disposed of as non-friable asbestos contaminated waste; or
- b) If not using disposable PPE, boots and reusable gloves shall remain in the RWA or shall be decontaminated at a washing station prior to leaving the RWA. Rinsate from the boot wash station will be collected, filtered to less than 5 microns and discharged to a sanitary sewer with municipality/service provider approval or re-applied to RACS.

2) Friable RACS Personnel Decontamination:

- a) Disposable impermeable suits or equivalent coveralls will be removed before exiting RWA and disposed of as non-friable asbestos contaminated waste, and personnel shall conduct a dry decontamination of work clothes and tools to remove potentially contaminated soils, or
- b) After removal of suits or coveralls, if personnel are contaminated to the point that dry-decon will not suffice, a full wet decontamination will be conducted prior to exiting RWA with collection of rinsate and filtration to less than 5 microns and discharge to a sanitary sewer with municipality/service provider approval. Re-application of decontamination-shower water is prohibited.

All disposable PPE, tools and materials used during decontamination (booties, protective coveralls, plastic sheeting, latex gloves, brushes, brooms, etc.) will be disposed of as non-friable ACW, at a licensed landfill.

6.9 Notification

The CDPHE HMWMD will be notified a minimum of 24-hours in advance of planned RACS remediation start-up, via submittal of a completed Notification of RACS Disturbance form. Additionally, any changes to this Plan will be submitted to and approved by the Division prior to implementation.

Periodic progress reports can be submitted to CDPHE as requested. This can include activities, site conditions with wind shut downs, along with results of the air monitoring TEM, PCM, and soil PLM laboratory results. In addition, if corrective action was required, the report will describe the increase in engineering controls performed.

6.10 Record Keeping

Control of outgoing waste and daily record keeping will be the responsibility of the contractor. CABI and AMS records shall be maintained for the following items:

- Type, volume and number of loads of outgoing asbestos-contaminated waste,
- Variations from approved operating procedures,
- Air monitoring data and laboratory results,
- Site meteorological monitoring data,

- Summary and description of any work stoppages of operations by type (wind, equipment failure, etc.),
- Any material deviations from this Plan.

6.11 QUALIFICATIONS AND LIMITATIONS

The recommendations in this Plan are limited to the nature and scope of the planned excavation and regrading of soil within the site boundary as described in this Plan and are based upon the information available to DS Environmental Consulting, Inc. (DS) as described. These recommendations should not be assumed to be sufficient for activities beyond the described soil disturbing activities or with respect to conditions, materials, or types of waste not described herein, and in the event other activities are considered or different conditions or materials are encountered, a qualified environmental consultant or licensed professional engineer should be consulted and, if appropriate, regulatory agencies should be involved.

By nature of the task at hand, several assumptions have been made and identified in this Plan. DS cannot guarantee that these assumptions are in fact correct. If incorrect, the conclusions and recommendations contained herein may vary.

If additional information concerning the site conditions becomes available, or other or additional activities are contemplated with respect to the waste materials on site, the conclusions and recommendations in this Plan may not be adequate and should not be considered accurate unless the additional information or activities are reviewed, and the recommendations are modified in writing by /DS and, if necessary, approved by an EPA or CDPHE representative.

Should DS determine that material changes are required to the activities covered by this Plan, DS will contact HMWMD to discuss said material changes to determine whether the material changes will affect any determination HMWMD has rendered regarding this Plan and to ensure compliance with the applicable provisions of 30-20-100, C.R.S., et seq. and 6 C.C.R. 1007-2.

REFERENCES

- Colorado Code of Regulations (CCR). CCR Document 5 CCR 1002-65 Regulations Controlling Discharges to Storm Sewers. Department 1000 Public Health and Environment, Agency 1002 Water Quality Control Commission (1002 Series).
- CCR Document 6 CCR 1007-2 Solid Waste Disposal Sites and Facilities Siting of Hazardous Waste Disposal Sites Inspection of Commercial Hazardous Waste Disposal Sites. Department 1000 Public Health and Environment History, Agency 1007 Hazardous Materials and Waste Management Division.
- CCR Document 6 CCR 1007-3 Part 264 Hazardous Waste - Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities. Department 1000 Department of Public Health and Environment, Agency 1007 Hazardous Materials and Waste Management Division.
- CCR Document 6 CCR 1007-2 Part 1 Revision to Regulations Pertaining to Solid Waste Sites and Facilities (6 CCR 1007-2, Part 1) – Deletion and Replacement of Existing Section 5.5 Regulations (Management of Asbestos-Contaminated Soil) with New Section 5.5 Regulations (Management of Regulated Asbestos Contaminated Soil (RACS)); the Addition of Appendix 5A (Sample Collection Protocols and Analytical Methodologies) and the Associated Additions and Revisions to Section 1.2 Definitions, (Adopted by the Solid and Hazardous Waste Commission on August 19, 2014).

Department of Public Health and Environment, Solid and Hazardous Waste
Commission, Hazardous Materials and Waste Management Division.
Colorado Department of Public Health & Environment (CDPHE) Air Quality Control
Commission Regulation No. 8, Control of Hazardous Air Pollutants, Part B - The Control
of Asbestos. Amended 18 October 2007, effective 30 January 2008.
Title 29 Code of Federal Regulations (CFR), Part 1926.1101 - Asbestos Standard for the
Construction Industry – Occupational Safety and Health Administration

7 AMBIENT AIR MONITORING

PSC has included perimeter ambient air monitoring within this scope of work. Details for the air monitoring is presented in the Ambient Air Monitoring Plan. The monitoring will be conducted during the pre-remediation baseline, the active remediation, and the post-remediation phases of the project using real-time measurement instruments and time-integrated sample collection methods.

Real-time air monitoring will be conducted at regular intervals throughout the work day to monitor measured concentrations of photo-ionizable volatile vapors. The real-time air quality data will be collected to assess air quality conditions at the property perimeter during the work day to identify if site activities are adversely affecting local air quality and to identify when the implementation of additional emission control measures may be necessary.

Time-integrated sampling will be conducted 24-hours per day to measure volatile organic compounds. The samples will be analyzed to document concentrations of volatile organic compounds at the perimeter relative to air quality towards off-property receptors.

8 OVERSIGHT AND HEALTH & SAFETY

PSC will provide a Remediation Construction Site Supervisor, a Project Air Monitoring Technician, and an on-site Health & Safety Officer. These individuals will be responsible for the daily field activities, monitoring and documenting the excavation progress and extent, and overseeing the safety of the remediation crew and personnel. The Site Supervisor will be responsible for overseeing all activities on the remediation site, coordinating trucking, coordinating deliveries, and personnel. The Site Supervisor will also be responsible for coordinating the on-site activities of any subcontractors such as the asbestos contractor or the surveyors.

The Site Health & Safety Officer will be responsible for overseeing the safe operation and safe activities on a daily basis. A remediation project of this magnitude requires a full time Health & Safety Officer to manage all the activity and aspects of safety. With the use of heavy construction equipment, excavation hazards, and exposure to environmental hazards, the risk to health and injury on the site is high. The Health & Safety Officer will be responsible for opening each day with a health & safety briefing of the daily planned field activities advising all personnel of the potential hazards related to the activities. The Health & Safety Officer is also responsible for monitoring personnel for potential exposure, determining when levels of PPE must be upgraded, and briefing all subcontractors and site visitors of the hazards that might be encountered while at the site.

9 SITE RESTORATION / DEMOBILIZATION

Site restoration will include making the site safe for personnel to enter but all road removals and backfilling will be completed by others. PSC will remove all equipment and materials from the site.

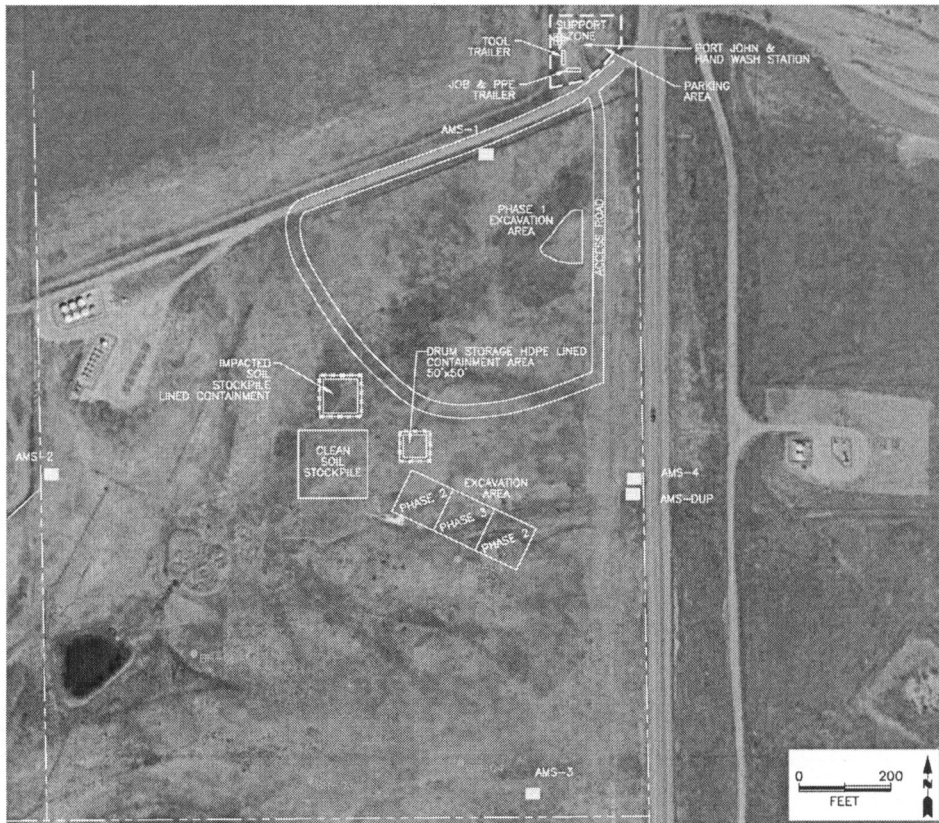
10 PROJECT SEQUENCE

PSC's general sequencing approach is as follows:

1. Completion of required submittals
2. Mobilization/Site Setup
3. Baseline Air Sampling
4. Phase 1 Excavation
5. Phase 2 Excavation
6. Phase 3 Excavation
7. Partial Demobilization
8. Post Remediation Ambient Air Monitoring
9. Demobilization

LIST OF FIGURES

Figure	Description
1	Site Layout Map



LEGEND

- AIR MONITORING STATION LOCATION
- METEOROLOGICAL STATION

Map provided by PSC including all layout.

Neuhaser Landfill 2259 County Road 5, Erie, CO		
Site Layout Map		
Geosyntec consultants	Figure 1	11/17/2017
	DE0302	